Claims

1. A method for optical transmission of a polarization division multiplexed signal (PMS) having two orthogonal data signals (OS1, OS2) whose carrier signals (CW1, CW2; CW_x, CW_y) have the same wavelengths and are modulated by data signals (DS1, DS2),
characterized in that the carrier signals (CW1, CW2; CW_x, CW_y) are phase shifted 90° relative to one another.

2. The method as claimed in claim 1,
characterized in that the phase difference between the carrier signals (CW1, CW2; CW_x, CW_y) is controlled.

3. The method as claimed in claim 2,
characterized in that to obtain a phase control criterion the circular polarization component of the polarization division multiplexed signal (PMS) is measured to provide a control signal (RS).

4. The method as claimed in claim 3,
characterized in that
a measurement signal (MS) tapped off from the polarization division multiplexed signal (PMS) is split into two identical signal components, one of which is converted directly into a first electrical sub-signal (EA) while the other is first fed via a $\lambda/4$ plate (16) tuned to the wavelength of the carrier signals (CW1, CW2; CW_x, CW_y) and a polarization filter (17) and then converted into a second electrical sub-signal (EB),
the two signal components are compared with one another to obtain a control signal (RS) and
the phase between the carrier signals (CW1, CW2; CW_x, CW_y) is varied in such a way that the electrical sub-signals (EA,EB) have the same values.

5. The method as claimed in claim 2, characterized in that to obtain a phase control criterion a measurement signal (MS) tapped off from the polarization division multiplexed signal (PMS) is fed to a DGD element (21) tuned to the wavelength of the carrier signals (CW1, CW2; CW_x, CW_Y), the output signal of the DGD element (21) is converted into an electrical signal (ETS) and measured and a control signal (RS) is obtained therefrom and the phase between the carrier signals (CW1, CW2; CW_x, CW_Y) is varied in such a way that the output signal of the DGD element (21) attains an extreme value.

6. The method as claimed in claim 5, characterized in that the polarization planes of the orthogonal data signals (OS1, OS2) have an angle of ±45° relative to the main axes of the DGD element.

7. The method as claimed in claim 2, characterized in that to obtain a phase control criterion, a measurement signal (MS) tapped off from the polarization division multiplexed signal (PMS) is split into two mutually orthogonal signal components (CW_x, CW_Y), the orthogonal signal components (CW_X, CW_Y) are converted into electrical signal components (E_x, E_Y) and the control signal (RS) is obtained from the amplitudes of the electrical signal components (E_x, E_Y).

8. The method as claimed in claim 7, characterized in that

the polarization planes of the orthogonal signals (OS1, OS2) are set ±45° to a polarization plane of a polarization splitter (24) and

the phase between the carrier signals (CW1, CW2; CW_x, CW_y) is varied in such a way that the amplitudes of the electrical signal components (E_x, E_y) have identical values.